

1. An interferential current treatment apparatus comprising:  
means for providing a plurality of independent electrical current sources;  
a first pair of treatment electrodes, coupled to a first independent electrical current  
source, capable of establishing a circuit path operating at a first frequency  
when attached to a patient;  
5 a second pair of treatment electrodes, coupled to a second independent electrical  
current source, capable of establishing a second circuit path operating at a  
second frequency different than the first frequency when attached to a  
patient, wherein a first interferential beat frequency is established between  
the first and second circuit paths;  
a third pair of treatment electrodes, coupled to a third independent electrical current  
source, capable of establishing a third circuit path operating at a third  
frequency generally greater than the first and second frequencies when  
attached to a patient; and  
a fourth pair of treatment electrodes, coupled to a fourth independent electrical  
current source, capable of establishing a fourth circuit path operating at a  
fourth frequency greater than the third frequency when attached to a patient,  
wherein a second interferential beat frequency is established between the  
third and fourth circuit paths.

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2. The apparatus according to claim 1 further comprising frequency varying  
means, coupled to the current source providing means, to vary the frequency of at least one  
circuit path relative to another circuit path during use thereby varying the beat frequency  
between the two circuit paths.

3. The apparatus according to claim 1 wherein the beat frequency between at least two of the pair of treatment electrodes operates in a range of 0-200 Hertz (Hz).

4. The apparatus according to claim 1 wherein the first frequency is set generally at 1850 Hertz.

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10 5. The apparatus according to claim 2 wherein the frequency varying means is capable of varying the frequency either before treatment or during treatment of the patient.

15 6. The apparatus according to claim 1 further comprising means for displaying the frequency and elapsed time of use of each of the plurality of current sources in use.

15 7. The apparatus according to claim 1 wherein a third beat frequency is established between the first circuit path and the third circuit path when the circuit paths are proximate one another or overlapping.

20 8. The apparatus according to claim 1 wherein the current providing means generates alternating current for each current source as applied to the patient and further comprises a signal generator to apply a frequency on the alternating current for each of the independent current sources.

25 9. The apparatus according to claim 8 wherein the current providing means further comprises display and control means, coupled to the signal generator, to enable an operator to control the current level and frequencies of each current source and to display the same to the operator.

10. An interferential current treatment apparatus comprising:  
means for providing a plurality of independent electrical current sources;  
a first pair of treatment electrodes, coupled to a first independent electrical current  
source, capable of establishing a circuit path having a first frequency when  
5 attached to a patient;  
a second pair of treatment electrodes, coupled to a second independent electrical  
current source, capable of establishing a second circuit path having second  
frequency generally within 200 Hertz of the first frequency when attached to  
the patient, wherein a first interferential beat frequency is established  
between the first and second circuit paths;  
a third pair of treatment electrodes, coupled to a third independent electrical current  
source, capable of establishing a third circuit path having a third frequency  
generally greater than the first frequency by at least 500 Hz when attached  
to the patient; and  
a fourth pair of treatment electrodes, coupled to a fourth independent electrical  
current source, capable of establishing a fourth circuit path having a fourth  
frequency no more than 200 Hertz greater than the third frequency when  
attached to a patient, wherein a second interferential beat frequency is  
established between the third and fourth circuit paths.

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11. The apparatus according to claim 10 further comprising frequency varying  
means, coupled to the current source providing means, to vary the frequency of at least one  
circuit path relative to another circuit path during use thereby varying the beat frequency  
between the two circuit paths.

12. The apparatus according to claim 10 wherein the beat frequency for the first and second pair of electrodes is 2-6 Hz.

5 13. The apparatus according to claim 12 wherein the beat frequency for the third and fourth pair of electrodes is 8-12 Hz.

14. The apparatus according to claim 10 wherein the first frequency is set generally at 1850 Hertz.

10 15. The apparatus according to claim 11 wherein the frequency varying means provides frequency variation either before treatment or during treatment of the patient.

15 16. The apparatus according to claim 10 further comprising means for displaying the frequency and elapsed time of use of each of the plurality of current sources in use.

20 17. The apparatus according to claim 10 wherein a third beat frequency is established between the first circuit path and the third circuit path when the circuit paths are proximate one another or overlap.

18. The apparatus according to claim 10 wherein the current providing means comprises a signal generator to apply a frequency on an alternating current for each of the independent current sources.

19. The apparatus according to claim 10 wherein the current providing means further comprises display and control means, coupled to the signal generator, to enable an operator to control the current level and frequencies of each current source and to display the same to the operator.

20. An interferential current treatment apparatus comprising:  
a power control unit that provides a plurality of electrical current circuits from a  
source electrical current;  
a central processing unit, coupled to the power control unit, to define the voltage  
range and current level for each of the plurality of electrical current circuits;  
5 a signal processing unit, coupled to the central processing unit and each of the  
plurality of electrical current circuits, to provide an alternating current  
frequency for each of the plurality of electrical current circuits;  
a first pair of treatment electrodes, coupled to a first independent electrical current  
circuit, capable of establishing a circuit path operating at a first frequency  
when attached to a patient;  
a second pair of treatment electrodes, coupled to a second independent electrical  
current circuit, capable of establishing a second circuit path operating at a  
second frequency different than the first frequency when attached to a  
patient, wherein a first interferential beat frequency is established between  
10 the first and second circuit paths;  
a third pair of treatment electrodes, coupled to a third independent electrical current  
circuit, capable of establishing a third circuit path operating at a third  
frequency generally greater than the first frequency when attached to a  
patient, wherein a second interferential beat frequency is established between the  
15 first and third circuit paths;  
a fourth pair of treatment electrodes, coupled to a fourth independent electrical  
current circuit, capable of establishing a fourth circuit path operating at a fourth  
frequency greater than the third frequency when attached to a patient,  
wherein a second interferential beat frequency is established between the  
20 third and fourth circuit paths.  
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21. The apparatus according to claim 20 wherein the signal processor is capable of varying the frequency of at least one circuit path relative to another circuit path during use thereby varying the beat frequency between the two circuit paths.

5 22. The apparatus according to claim 20 wherein the beat frequency between the first frequency varying means establishes a beat frequency that varies pulse in a range between zero to a set upper limit.

10 23 The apparatus according to claim 20 wherein the first frequency is set at generally 1850 Hertz.

15 24. The apparatus according to claim 20 further comprising means, coupled to the central processing unit, for enabling an operator to set the current and frequency for each of the plurality of current circuits.

20 25. The apparatus according to claim 20 further comprising means, coupled to the central processing unit, for displaying the frequency and elapsed time of use of each of the plurality of current sources in use.

26. The apparatus according to claim 20 wherein a third beat frequency is established between the first circuit path and the third circuit path when the circuit paths are generally proximate one another or overlapping.

25 27. The apparatus according to claim 20 wherein the beat frequency for the first and second pair of electrodes is 2-6 Hz.

28. The apparatus according to claim 27 wherein the beat frequency for the third and fourth pair of electrodes is 8-12 Hz.